



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/516,937

12/14/2004

Yutaka Murakami

P26356

8654

7055 7590 02/04/2009
GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER

MILLER, BRANDON J

ART UNIT

PAPER NUMBER

2617

NOTIFICATION DATE

DELIVERY MODE

02/04/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary	Application No. 10/516,937	Applicant(s) MURAKAMI ET AL.	
	Examiner BRANDON J. MILLER	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16, 18-21, 23-24, and 26-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21, 23 and 29-31 is/are allowed.
- 6) ☒ Claim(s) 16, 18, 24, 26, 32 and 33 is/are rejected.
- 7) ☒ Claim(s) 19, 20, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendments/Remarks

Disposition of Claims

- I. Claims 16, 18-21, 23-24, and 26-33 are pending in the application.

Allowable Subject Matter

- II. Claims 21, 23, and 29-31 contain allowable subject matter.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 21 recites a transmission method for transmitting an orthogonal frequency division multiplexing signal with steps as defined in the specification (pages 11-133) including configuring a transmission frame including a first carrier group where a modulated signal for a first terminal is arranged and a second carrier group where a modulated signal for a second terminal is arranged; selecting, for the first carrier group, one of a first frame configuration where one modulated signal is transmitted from at least one antenna, and second frame configuration where a plurality of modulated signals are transmitted from a plurality of antennas; and selecting, for the second carrier group, one of the first frame configuration where one modulated signal is transmitted from at least one antenna, and the second frame configuration, where a plurality of modulated signals are transmitted from the plurality of antennas, each of the plurality of modulated signals being transmitted from a different antenna.

Applicant's independent claim 21 comprises a particular combination of steps, which is neither taught nor suggested by the prior art.

Dependent claim 23 is allowable based on its dependence on independent claim 21.

Claim 29 recites a transmitting apparatus comprising an orthogonal frequency division multiplexing signal generation section that generates an orthogonal frequency division multiplexing signal with a structure as defined in the specification (pages 11-133) including a frame configuration determining section that configures a transmission frame including a first carrier group where a modulated signal for a first terminal is arranged and a second carrier group where a modulated signal for a second terminal is arranged; and a plurality of antennas, wherein the frame configuration determination section selects, for the first carrier group, one of a first frame configuration where one modulated signal is transmitted from at least one antenna, and second frame configuration where a plurality of modulated signals are transmitted from the plurality of antennas; and selects, for the second carrier group, one of the first frame configuration where one modulated signal is transmitted from at least one antenna, and the second frame configuration, where a plurality of modulated signals are transmitted from the plurality of antennas.

Applicant's independent claim 29 comprises a particular combination of elements, which is neither taught nor suggested by the prior art.

Dependent claims 30-31 are allowable based on their dependence on independent claim 29.

Claims 19-20 and 27-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

III. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

IV. Claims 16, 18, 24, 26, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara et al. (US 7,099,265 B2) in view of Fuke et al. (US 6,785,248 B2).

Regarding claim 16 Kuwabara teaches a transmission method for transmitting an orthogonal frequency division multiplexing signal (see col. 4, lines 28-31). Kuwabara teaches composing a plurality of carrier groups each including one or more subcarriers; and assigning transmission data for a transmission destination terminal to the plurality of carrier groups (see col. 5, lines 42-51). Kuwabara teaches using, for each of the carrier groups, one of a first frame configuration where the transmission data is transmitted using one modulated signal (see col. 6, lines 5-9, data transmitted using a modulated signal from either antenna 10 (using one carrier group) or antenna 11 (using another carrier group) reads on data transmitted using one modulated signal (col. 4, lines 31-33)) and a second frame configuration where the transmission data is transmitted using a plurality of modulated signals (see col. 7, lines 9-13, data transmitted using modulated signals from antennas 10 (using one carrier group) and antenna 11 (using another carrier group) reads on data transmitted using a plurality of modulated signals (col. 4, lines 31-33)). Kuwabara teaches transmitting the assigned transmission data (see col. 6, lines 5-9 and col. 7, lines 9-13). Kuwabara does not specifically teach a plurality of destination terminals; and selecting whether the transmission data is transmitting using one modulated signal or a plurality of modulated signals. Fuke teaches a plurality of destination terminals (see col. 8, lines 7-18). Fuke teaches selecting whether transmission data is transmitting using one modulated signal or a plurality of modulated signals (see col. 5, lines 58-60). It would have been obvious for one of ordinary skill in the art at the time the invention was made to make the device in Kuwabara adapt to include a plurality of destination terminals and selecting whether the transmission data is transmitting using one modulated signal or a plurality of modulated signals because the base terminal in Kuwabara could be modified to communicate in the same way as the master station

Art Unit: 2617

in Fuke and the selection taught in Fuke could implemented in the base terminal in Kuwabara to facilitate the use of using one modulated signal or a plurality of modulated signals taught in Kuwabara.

Regarding claim 18 Kuwabara assigning transmission data based on channel state information from the destination terminal (see col. 7, lines 39-41).

Regarding claim 24 Kuwabara teaches a transmitting apparatus comprising an orthogonal frequency division multiplexing signal generation section that generates an orthogonal frequency division multiplexing signal (see col. 4, lines 28-31). Kuwabara teaches determining a modulated signal to be assigned to subcarriers of the orthogonal frequency division multiplexing signal and composing a plurality of carrier groups each including one or more subcarriers; and assigning transmission data for a transmission destination terminal to the plurality of composed carrier groups (see col. 5, lines 42-51). Kuwabara teaches using, for each of the carrier groups, one of a first frame configuration where the transmission data is transmitted using one modulated signal (see col. 6, lines 5-9, data transmitted using a modulated signal from either antenna 10 (using one carrier group) or antenna 11 (using another carrier group) reads on data transmitted using one modulated signal (col. 4, lines 31-33)) and a second frame configuration where the transmission data is transmitted using a plurality of modulated signals (see col. 7, lines 9-13, data transmitted using modulated signals from antennas 10 (using one carrier group) and antenna 11 (using another carrier group) reads on data transmitted using a plurality of modulated signals (col. 4, lines 31-33)). Kuwabara does not specifically teach a plurality of destination terminals; and selecting whether the transmission data is transmitting using one modulated signal or a plurality of modulated signals. Fuke teaches a plurality of destination terminals (see col. 8, lines

Art Unit: 2617

7-18). Fuke teaches selecting whether transmission data is transmitting using one modulated signal or a plurality of modulated signals (see col. 5, lines 58-60). It would have been obvious for one of ordinary skill in the art at the time the invention was made to make the device in Kuwabara adapt to include a plurality of destination terminals and selecting whether the transmission data is transmitting using one modulated signal or a plurality of modulated signals because the base terminal in Kuwabara could be modified to communicate in the same way as the master station in Fuke and the selection taught in Fuke could implemented in the base terminal in Kuwabara to facilitate the use of using one modulated signal or a plurality of modulated signals taught in Kuwabara.

Regarding claim 26 Kuwabara teaches composing a frame based on channel state information from the destination terminal (see col. 7, lines 39-41).

Regarding claim 32 Kuwabara teaches transmitting one modulated signal from at least one antenna and transmitting the plurality of modulated signals from a plurality of antennas (see col. 4, lines 31-33, col. 6, lines 5-9, col. 7, lines 9-13).

Regarding claim 33 Kuwabara and Fuke teach a device as recited in claim 32 and is rejected given the same reasoning as above.

Response to Arguments

V. Applicant's arguments with respect to claims 16, 18, 24, 26, and 32-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 2617

VI. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sumiya et al. Patent Number: 5,319,672 discloses a spread spectrum communication system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON J. MILLER whose telephone number is (571)272-7869. The examiner can normally be reached on Mon.-Fri. 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brandon J Miller/
Examiner, Art Unit 2617

January 22, 2009